

Better Buildings Residential Network Peer Exchange Call Series

The Impact of Insurance and Mortgages on Energy Efficiency: Resilience, New Markets, and More

May 26, 2022



Agenda and Ground Rules

- Agenda Review and Ground Rules
- Opening Poll
- Residential Network Overview and Upcoming Call Schedule
- Featured Speakers
 - Amanda Stinton, National Association of Realtors
 - Jeff McAulay, Energetic Insurance
 - Casey Murphy, Pearl Certification
- Open Discussion
- Closing Poll and Announcements

Ground Rules:

- 1. Sales of services and commercial messages are not appropriate during Peer Exchange Calls.
- 2. Calls are a safe place for discussion; **please do not attribute information to individuals** on the call.

The views expressed by speakers are their own, and do not reflect those of the Dept. of Energy.





Better Buildings Residential Network

Join the Network

Member Benefits:

- Recognition in media, social media and publications
- Speaking opportunities
- Updates on latest trends
- Voluntary member initiatives
- One-on-One brainstorming conversations

Commitment:

Members only need to provide one number: their organization's number of residential energy upgrades per year, or equivalent.

Upcoming Calls (2nd & 4th Thursdays):

- 6/09: Update: The State of Home Labeling and Residential Energy Efficiency
- 6/23: Coming Soon: Innovations Heading to the Residential Efficiency Market from the DOE Advanced
 Building Construction Initiative

Peer Exchange Call summaries are posted on the Better Buildings website a few weeks after the call

For more information or to join, for no cost, email bbresidentialnetwork@ee.doe.gov, or go to energy.gov/eere/bbrn & click Join







Amanda Stinton

National Association of Realtors



The Impact of Insurance and Mortgages on Energy Efficiency – Resilience, New Markets, and More

Amanda Stinton
Director, Sustainability & Leadership
National Association of REALTORS®









SUSTAINABILITY & RESILIENCE PLAN

- Organized in four pillars representing a comprehensive strategy that supports engagement on sustainability efforts throughout the industry.
- Structured, ten-year implementation that addresses NAR, state and local associations, and general membership.
- Highlights opportunities and trends in each pillar.



THE FOUR PILLARS

ENVIRONMENT



- Provide Sustainability Tools
- Increase Research, Data Dissemination and Industry Leadership
- Expand Training and Benefits

SOCIAL



- Expand Stakeholder Outreach
- · Focus on Health and Wellness
- Support Healthy, Vibrant, Diverse Communities

GOVERNANCE



- Build a Sustainability Team
- Strengthen Partnerships
- Institute Annual Sustainability Reporting

RESILIENCE



- Expand Sustainability & Resiliency Guidance
- Provide Guidance on Financing Resiliency
- Explore Extreme Weather and Climate Risk for Our Industry

nad Resilience Plan is organized in four pillars representing a comprehensive strategy that supports engagement on sustainability efforts throughout the industry.







ESG+R REPORT 2021

Inaugural National Association of REALTORS® ESG+R Report

- Published Jan 2022.
- Snapshot of NAR efforts in each area (ESG+R), including future goals & themes.
- Tells the association's sustainability story.
- Conveys transparent leadership and provides accountability for NAR's sustainability goals.
- Serves as a guidepost for our organization's sustainability efforts annually.



SUSTAINABILITY AT A GLANCE IN 2022



HOME PERFORMANCE COUNTS JOINT INITIATIVE

Connects REALTORS® and Builders to introduce benefits of high-performance homes so they can add value to client and professional relationships



ESG+R REPORT

Annual report showing organization's sustainability progress over time



STATE & LOCAL RESOURCES

Engage association leaders in the sustainability conversation and identify how NAR can help state and local associations implement sustainability efforts.



EDUCATION & AWARENESS

Develop and launch a 1-hour sustainability course for members, staff, and affiliates.



SUSTAINABILITY SUMMIT

Host a live sustainability summit with member leaders and industry leaders to explore opportunities and action.



REALTORS® & SUSTAINABILITY REPORTS

Publish two reports on sustainability trends in real estate – one residential and one commercial.



REALTORS® & SUSTAINABILITY

50%

Of REALTORS have helped clients buy or sell a home with green features in the past 12 months

63%

Of REALTORS® said that promotion of energy efficiency

34%

Of REALTORS® noted rising anxiety about the effect of climate change and extreme weather events on their businesses



SHARE OF HOME BUYERS



Millennials made up largest share of buyers at 43%

Gen Xers consisted of 22% of recent home buyers





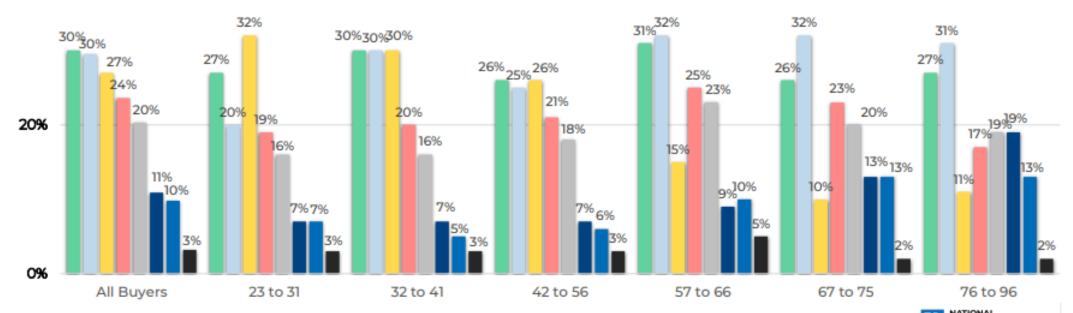
Baby Boomers made up the largest share of sellers at 42%



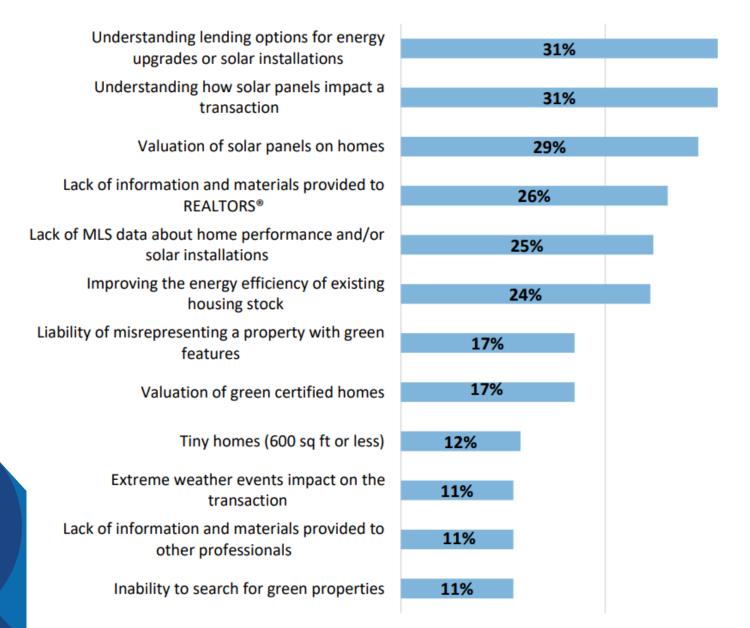
TRANSACTIONS

ENVIRONMENTALLY FRIENDLY FEATURES CONSIDERED "VERY IMPORTANT"





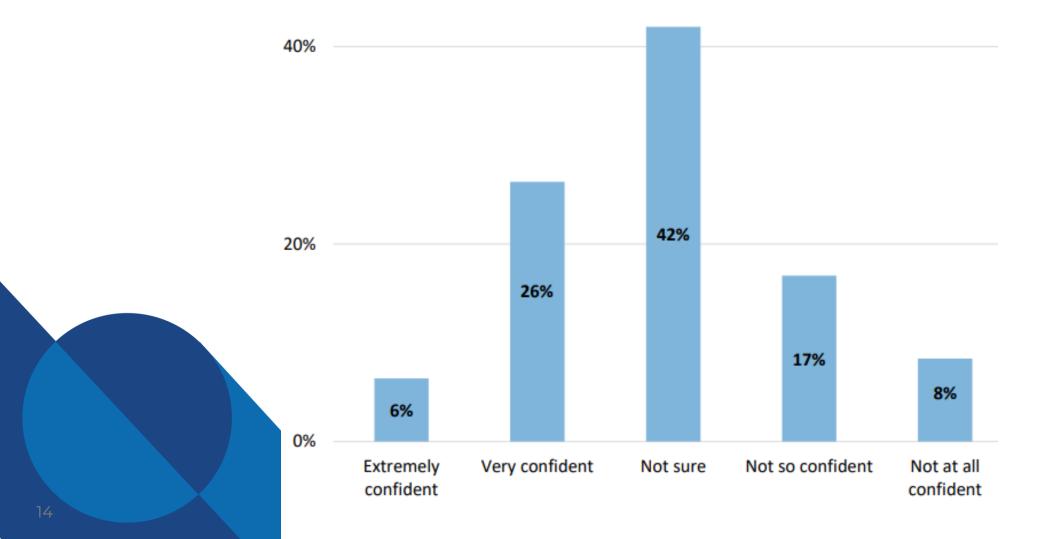
Issues and Considerations in Market







Connecting Clients with Green Lending Products





OPPORTUNITIES

- Increase understanding of resilient financing options for agents and REALTOR® associations to share with members to give REALTORS® added value in the transaction process.
- Development of education for REALTORS® specific to resilient financing products.
- Continued demonstration of leadership on sustainability to integration and success for brokers, clients, communities.
- Collaboration with industry professionals brings new opportunity for sustainable business operation.



QUESTIONS









Jeff McAulay
Energetic Insurance





ENABLING THE CLEAN ENERGY REVOLUTION THROUGH DATA-DRIVEN RISK MANAGEMENT

U.S. DOE Better Buildings Residential Network May 26, 2022

The Impact of Insurance on Energy Efficiency

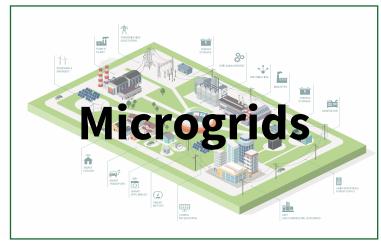
ENERGY TECHNOLOGIES DEPEND ON LONG-TERM CONTRACTS













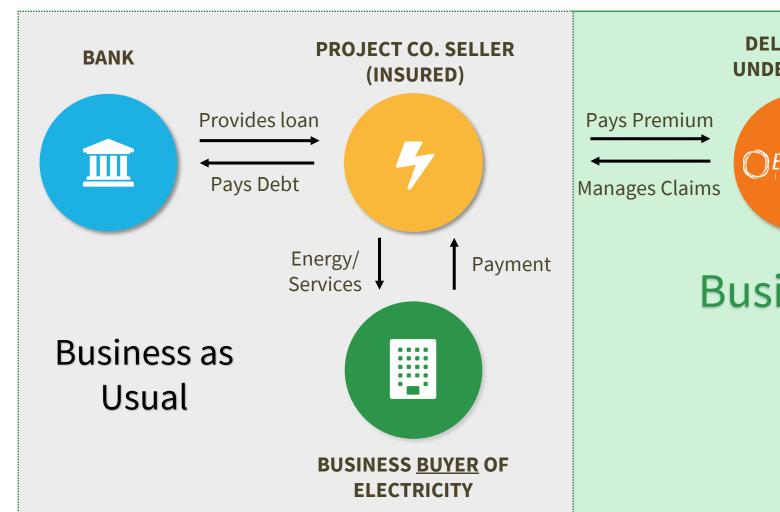
90% OF ORGANIZATIONS STRUGGLE TO FINANCE RENEWABLE & DISTRIBUTED ENERGY

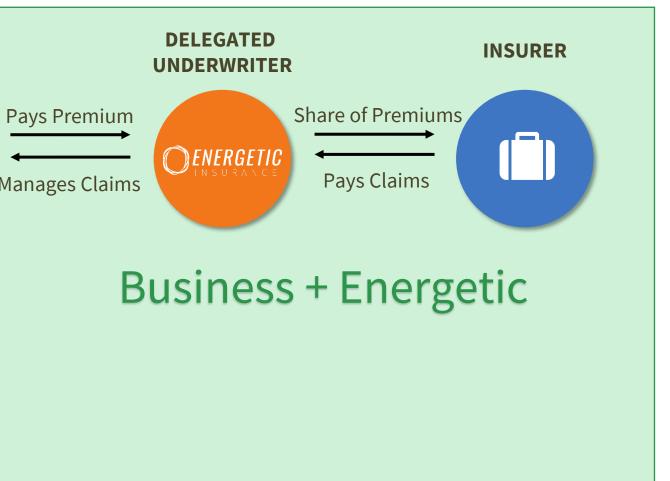
BECAUSE THEY ARE UNRATED OR BELOW INVESTMENT GRADE



WE SOLVE CREDIT RISK WITH INSURANCE

WHEN THE BUSINESS DOESN'T PAY - WE DO





SERVING MULTIPLE MARKETS

COUNTERPARTY CREDIT COVERAGE ACROSS CONTRACT TYPES





- Solar + storage
- Microgrid with thermal backbone



UTILITY-SCALE

- Corporate VPPAs/CFDs
- Municipal utilities, CCAs
- Sub-IG utility offtake



ENERGY EFFICIENCY

- Multi-unit residential
- Commercial & industrial
 - Low-income housing

Asset Structure: Individual asset or portfolio back-leverage

Debt Structure: Perm debt, mini-perm with optional refi coverage or short-term warehouse coverage

APPLICABLE ACROSS INDUSTRY VERTICALS

SCALING IN MULTIPLE PROJECT STRUCTURES, GEOGRAPHIES, INDUSTRY VERTICALS AND SUPPLY CHAIN DISTRIBUTION





















COVERING DIVERSE MEASURES

REDUCING OVERALL ENERGY REQUIREMENTS FOR BUILDINGS

Hardware & Controls:

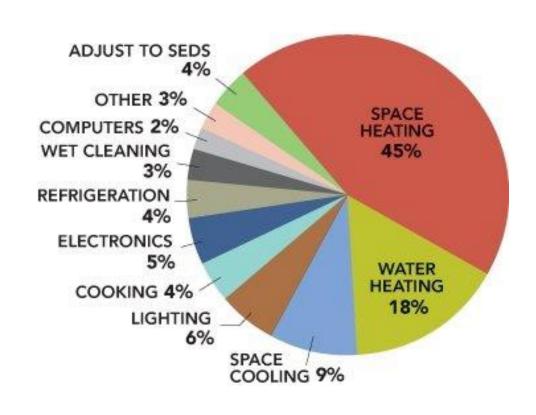
- HVAC
- Appliances
- LED Lighting
- Smart Thermostat
- Hot water

Building Envelope:

- High R-value windows
- Air-sealing
- Duct insulation

Fuel Switching

- Gas to heat pump (electric) heat
- EV charging (*increasing total use, but more efficient form*)



Source: 2011 Buildings Energy Data Book, Section 2.0.

BACKED BY ONE OF THE LARGEST GLOBAL REINSURERS





Energetic Insurance is an ideal partner to develop innovative risk management solutions needed to spur future growth in renewables in the US and Worldwide

- Will Thorne, Head of P&C Ventures

S&P Global Ratings	AA-
↑ BEST ®	A+
Moody's	Aa3
FitchRatings	AA-

Global Ranking	Reinsurance Company	Gross Premiums Written (2020 USD \$MM)	
1	Swiss Re	\$42,228	
2	Munich Re	\$37,864	
3	Hannover SE	\$25,309	
4	SCOR SE	\$18,302	
5	Berkshire Hathaway	\$16,089	

SUPPORTED BY OUTSTANDING ORGANIZATIONS









































@energetic_insur



Casey Murphy
Pearl Certification



Scaling Home Performance:

Beyond Comfort, Indoor Air Quality, and Energy Efficiency

Casey Murphy SVP Business Incubation

Presentation for Better Building Residential Network May 26, 2022



About Pearl Certification.

Pearl Certification makes high-performance home value visible to benefit homeowners and the contractors, builders, raters and real estate professionals who serve them.



Mission

Pearl Certification makes our global community a better place by giving homeowners tools to improve the health, comfort, efficiency, resilience and value of their homes.

Pearl Certification is dedicated to transforming the national housing market for good.

We help homeowners while simultaneously partnering with businesses and public entities to build a market that rewards energy efficiency. This holistic approach increases both the supply of and demand for sustainable, energy-efficient housing, from now on.

How do we achieve this?

- We qualify an elite network of contractors and real estate professionals.
- These professionals improve home performance and ensure these homes are properly marketed and valued.
- Together, we **empower homeowners** to increase the efficiency, health, comfort and resilience of their homes over time.
- Homeowners **maximize the value** of their high-performing homes at the time of appraisal for refinance or sale.



Residential sector, 2021:

Homes sales	\$1.3	Trillion
Homes built	\$0.3	Trillion
Home improvements	\$0.4	Trillion

Home certification is a large, untapped market.

\$44B **Total Addressable**

Market is at

the

intersectio

n of

multiple,

very large

markets



Our

certificatio

n and

platform

are a value

add for

each of

them

The power of connecting your high-quality work to greater home value



What motivates homeowners to spend more for better products and service?

This national survey from RMI of 1000+ homeowners found that the top three reasons consumers spend more on high-efficiency (energy) installs are:

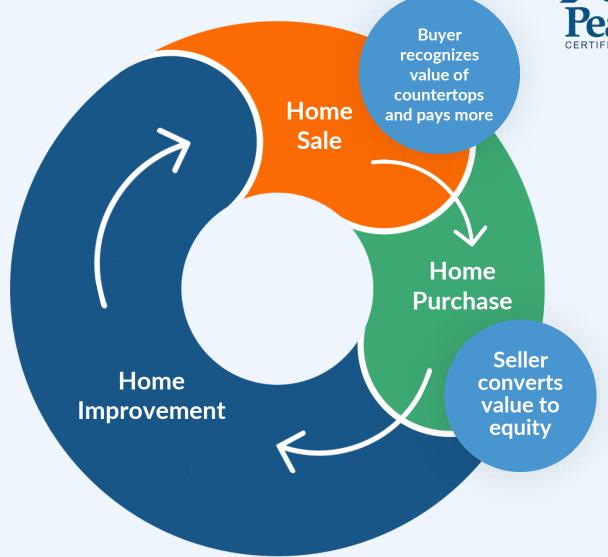
- Long-term savings
- Greater comfort
- Increase in home value



Home Value Cycle

Home buyer "sees" high-performing features through Pearl's Certification Report and marketing materials

Home seller captures the value of the investment in the sale price



The Problem:

There are few assurances of financial savings, payback, or resale value for home improvements.

Selecting high quality equipment and installation can be challenging.

Transparency is lacking; its hard for consumers to know whom to trust.

Pearl's Solution:

Certification makes good choices easy and obvious, ensuring a high-performing home that's more comfortable and resilient:



- Invest with confidence
- Capture higher resale value
- Save with lower bills

Pearl helps drive a cultural shift in energy attitudes and behaviors for homeowners to act on climate



Pearl's certification platform connects homeowners, contractors, manufacturers, and other stakeholders to the home, its data, and future transactions increasing home value and creating a network effect to scale



Homeowners



Home Builders & Contractors



Manufacturers

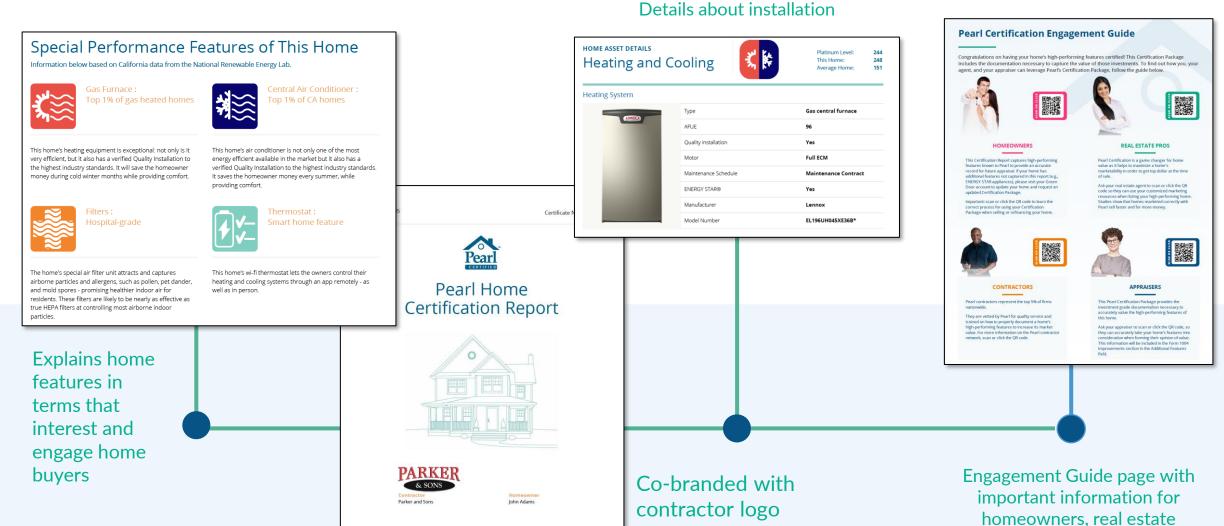


Governments, Insurance₃₅ Companies, Valuation Industry

The Pearl Certification Report: Third-Party Credibility and Homeowner Engagement



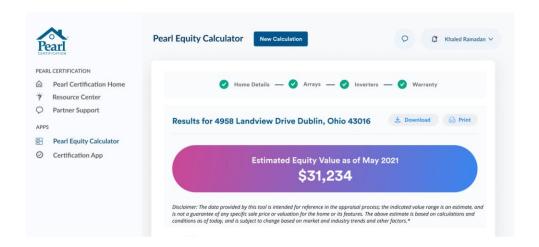
agents, and appraisers



Solar Equity Calculator

Both a proposal tool for solar installers and a means to calculate discounted cashflow for Pearl's Certification report:

- Based on algorithms developed by NREL
- Can be used on a mobile device
- API for integration into contractor's proposal tool
- Only calculator that uses verified contractor data





Certified on June 23, 2021 Pearl Solar Certification Report

Pearl Certification Equity Value Details

ate Created 06/23/2021 05:32 PM



isclaimer

The data presented here is based on the system as represented by the homeowner/ contractor who have verified the data is true and accurate. The calculation was made on 06/23/2021 and should be regenerated for an appraisal more than a year from this date.

Value Range Low \$49197.45 Expected \$54990.58 High \$60783.72

Overview

The values presented here are calculated using the Income-Based Approach where our algorithm looks at the total future benefits that the homeowner will receive from the Photovoltaic system over its useful life, and calculates what the value of those future benefits is right now.

The useful life of the photovoltaic system is determined by the length of the power production warranty. A system will likely continue to operate after the warranty has expired and in that sense the value presented here is a conservative estimate of the potential value of the system.

Total Discount Cash Flow

Year	Low	Expected	High	
2021	\$49197.45	\$54990.58	\$60783.72	
2022	\$46712.88	\$52211.81	\$57710.73	
2023	\$44278.21	\$49488.99	\$54699.78	
2024	\$41892.44	\$46821.03	\$51749.61	
2025	\$39554.61	\$44206.81	\$48859.01	
2036	\$16742.65	\$18706.04	\$20669.42	
2037	\$14910.83	\$16658.97	\$18407.11	
2038	\$13115.92	\$14653.25	\$16190.57	
2039	\$11357.19	\$12688.05	\$14018.91	
2040	\$9633.90	\$10762.56	\$11891.21	
2041	\$7945.36	\$8875.97	\$9806.59	
2042	\$6290.87	\$7027.53	\$7764.18	
2043	\$4669.75	\$5216.45	\$5763.14	
2044	\$3081.33	\$3441.99	\$3802.64	
2045	\$1524.96	\$1703.41	\$1881.86	

Pearl Home Certification Report | pearlcertification.com/registry

Appraisal Addendum

Pearl Report Includes a Completed Appraisal Addendum for Refi or Resale

EFFICIENCY FEA	ATURES (Water, Energy	v. and Envir	onmental. Se	e types defi	ned in glos	sarv).		
The following items a								
Insulation	☐ Fiberglass Blown-In ☐ Fo ☐ R-Value Wall Ceiling ☐ G							
Building Envelope	Envelope Tightness: Unit: Instructions: Insert the rating envelope. Building Codes for adopted a building code. http							
Windows	■ENERGY STAR®	□ Low E	☐ High Impact	☐ Storm	Double Pane Triple Pane	□ Tinted	☐ Solar Shades	
Day Lighting	# of Skylights:	# of Skylights: # of Skylights: Other (Describe): You be the first of the fir						
ENERGY STAR® Appliances	ENERGY STAR®:: D Dishwasher Refrigerator Washer/Dryer Other Energy Source: Propane Electric Natural Gas Other (Describe): Note: ENERGY STAR® appliances do not result in an ENERGY STAR® Home.							
Water Heater	☐ ENERGY STAR®		Size: gallons Tankless	☐ Solar (next page) ☐ Heat Pump ☐ Coil				
HVAC & Related Equipment Describe in	uipment Efficiency Rating % COP:				Ø Yes □ No Ø Yes □ No □ Yes □ No			
comments area.	*Annual Fuel-Utilization iciency	SEER: EER:	HVAC &	Related	O Hig	h Efficie	ncy HVAC	
Indoor Environmental Quality	Energy (ERV) or Heat Recovery Ventilator (I Other Measured Whole-House Ventilation Humidity Monitoring Device installed		Equipm	Equipment Effici Describe in AFUE		Efficiency Rating % AFUE* %		COP: HSPF: 9.5
Water Efficiency	Reclaimed Water System (Greywater reuse system Water Saving Fixtures			nnual Fuel-Utilization ciency		SEER: 19.0 EER:		
Utility Costs	Annual Utility Cost: \$ /year, based on: to (full year). Includes (check all that apply): Electric Heating Water Other:					# Of Occupants:		
Comments Include source for information provided in this section.	The following property has a With the cooperation and ap Appraisal Institute makes no analysis or work product pro Reports®							

Published guidance from Fannie Mae:

Thermostat/Controllers? Programmable Thermostat?

Electric Vehicle Ready? (car charger)

Auxiliary Heat Source?

Radiant Floor Heat?

Geothermal?

"Special energy-saving items must be recognized in the appraisal process and noted on the appraisal report form. For example, when completing the appraisal report (Form 1004), special energy-efficient items are to be addressed in the Improvements section in the Additional features field."

☐ Yes ☐ No

☐ Yes ☐ No

■ Yes ■ No

O Yes O No

Adding Value



Pearl can certify a single improvement, or the whole house.

Homes with enough high-performing features reach Pearl Silver, Gold, or Platinum.



Either way, we add value.

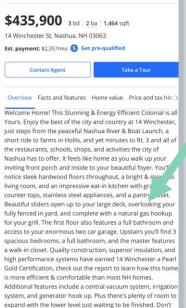


Real Estate Marketing Package

OOA

Q





miss your opportunity to own this incredible home, schedule a

Save Share oo More

a walk-in closet. Quality construction, superior insulation, and high performance systems have earned 14 Winchester a Pearl Gold Certification, check out the report to learn how this home is more efficient & comfortable than most NH homes. Additional features include a central vacuum system, irrigation system, and generator hook up. Plus there's plenty of room to

Social Media Content



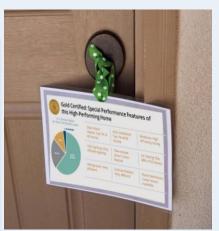


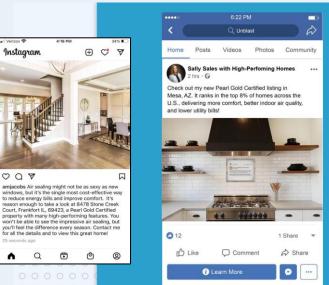
Home Tour Cards

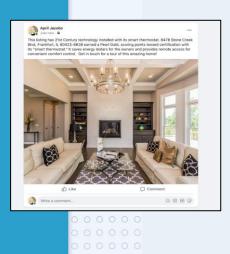




heating and cooling controls with this state-of-the-art







The Proof:



Pearl homes sell from 3% to 5.5% more

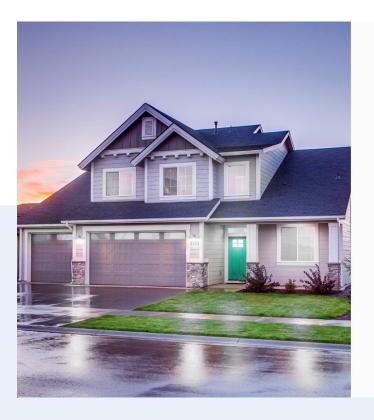
Verified by independent appraiser studies in four markets







-----POWERED by PEARL ----





Welcome!

Your home is your haven and your nest egg. Designed to protect both, Green Door is your virtual entryway to manage, maintain and improve your home's energy efficient performance. Get started.

Dashboard

Education

learn how to make their home higherperforming

Maintenance

get maintenance tips and set up maintenance tasks

Improvement

connect with professionals for more work (batteries, solar, etc.).

Refinance or Sale

find a listing agent, access the real estate marketing package, etc.

No cost, no selling of data.

Brought to them by their builder/contractor/real estate agent

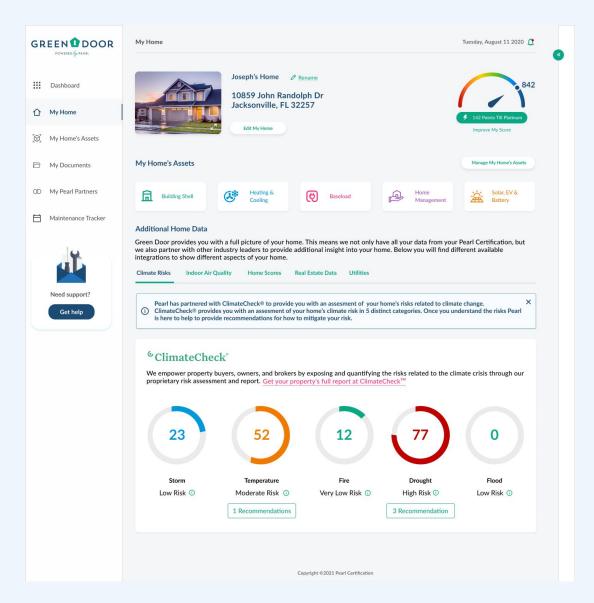


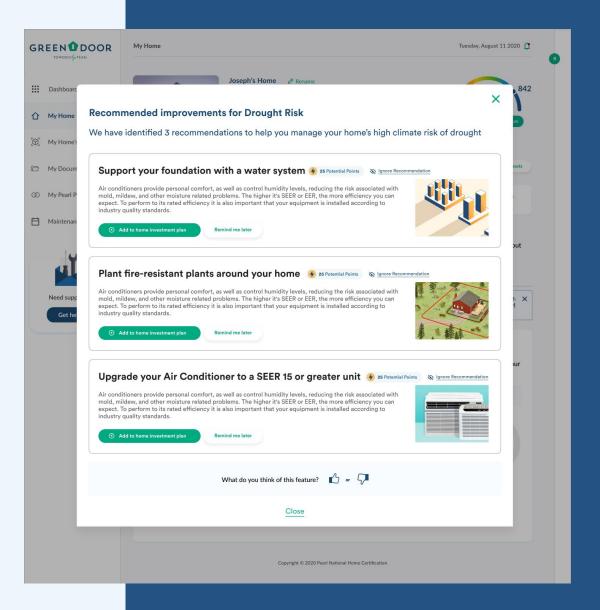


Climate Change Made Tangible

We empower property buyers, owners, and brokers by exposing and quantifying the risks related to the climate crisis through our proprietary risk assessment and report.

Green Door: Climate Check Integration





Upcoming



- Capture and make existing resiliency features (and programs) visible
- Refine scope of resiliency features
- Enhance our recommendations in Green Door
- Establish relationships with insurance companies and others who want trustworthy, "investment-grade" data
- Engage with programs

Closing Poll

After today's call, what will you do?

- Consider implementing one or more of the ideas discussed
- Seek out additional information on one or more of the ideas
- Make no changes to your current approach
- Other (please explain)





Explore the Residential Program Solution Center

Resources to help improve your program and reach energy efficiency targets:

- Handbooks explain why and how to implement specific stages of a program.
- Quick Answers provide answers and resources for common questions.
- Proven Practices posts include lessons learned, examples, and helpful tips from successful programs.
- Technology Solutions NEW! present resources on advanced technologies, HVAC & Heat Pump Water Heaters, including installation guidance, marketing strategies, & potential savings.

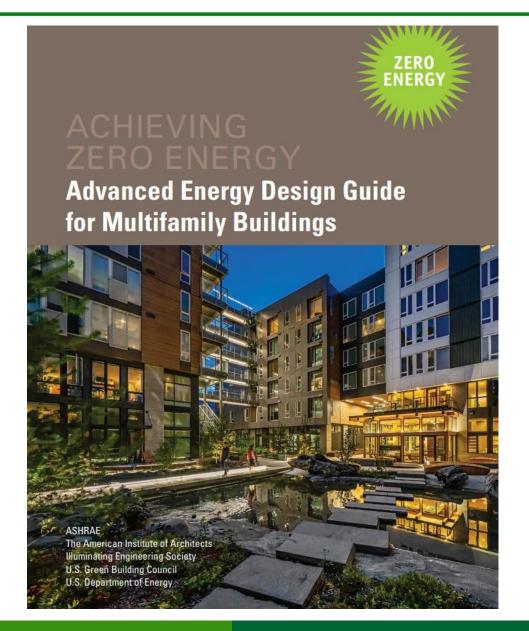


https://rpsc.energy.gov





Zero Energy Advanced Energy Design Guide for Multifamily Buildings



This Guide demonstrates that zero energy multifamily buildings are attainable and provides design teams with strategies for achieving energy savings goals that are financially feasible, operationally workable, and readily achievable.

The Guide offers direction for designing and constructing zero energy multifamily buildings in all climate zones through recommendations, strategies, and solution packages.

Now available for free download through ASHRAE https://www.ashrae.org/technical-resources/aedgs/zero-energy-aedg-free-download

Thank You!

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Please send any follow-up questions or future call topic ideas to:

bbresidentialnetwork@ee.doe.gov



